projectiondesign®

F1
SXGA
XGA

SXGA

SXGA (1280 x 1024)	3000 ANSI lumen	DLP Technology	28 dBA	Stylish	3 kg / 6.5 lbs
High resolution	High brightness	Single chip	'Noiseless'	Magnesium	Compact, low weight

bright projectors for bright people™

![projectiondesign®]

F1 SXGA

The F1 SXGA has been specifically designed for professional users of graphically demanding business or engineering applications, by combining unprecedented resolution and brightness with portability. Its' performance enables users to, for the first time, display true high resolution data while on the road. The F1 SXGA is fit for usage in demanding applications such as visual simulators, medical, engineering and geophysical research, by combining professional performance in a small, robust projector.

The projectiondesign F1

A unique concept

The F1 projector series has been designed to meet the stringent requirements of installers and professional users, and despite its small size, high performance and image quality have been main objectives during its development. With high brightness, lens options, flexible installation possibilities and highly accurate mechanics and optics, the F1 is fit for almost any installation need. The F1 has been designed with performance and value for money as the number one priority.

Single Chip DLP™ Technology by Texas Instruments®.

With focus on image quality and long life performance, using DLP™ is a natural choice. A single chip system has no convergence errors, a problem found with other competing 3-chip technologies. It also displays a highly accurate grey scale, without colour casts or shifts. Transferred to color images, this yields accurate reproduction of colors, and for instance flesh tones are rendered with natural precision. Using a single DMD™ (Digital Micromirror Device™) ensures a uniform black and white image, with very high contrast, unmatched by any competing digital technology. The DMD™ display itself is completely sealed, and as it is a non-organic device, does not change it's behaviour over time, providing a completely reliable display system, even for 24/7 applications, where continuous operation

is a requirement. The F1 SXGA is the only portable projector available anywhere that uses the SXGA (1280 x 1024) resolution DMD™, thus provides unmatched performance.

Digital Signal Processing for maximum image quality

Signal processing is based on the best possible components available within each category. Using patented Faroudja™ DCDi® 10-bit motion adaptive de-interlacing with automatic film mode detection and 3:2 and 2:2 pull down, diagonal processing (eliminates jagged lines), bad edit detection, and cross colour suppression, creates a film like image from any video input. Image processing includes proprietary linearity control, with specifically developed gamma curves and application adaptability through intuitive menus. The different gamma curves allows the user to match the projector to the desired application, for instance photographically correct rendering of images in a controlled environment, or filling a large conference room screen with a PowerPoint presentation. Furthermore, the F1 has an intuitive and easy to use user interface that controls all aspects of the image, such as individual color adjustments of R, G and B, and horizontal and vertical keystone correction. The F1 also has a Rich Media interface built in, to interface with other devices.

F1 XGA

For the majority of business applications, where overall impression cannot be compromised, the brightness, contrast and and image quality of the F1 XGA will yield optimal results. With it's high performance, it is the perfect projector for meeting and conference rooms, where users interact with it on a daily basis.

Professional connectivity and compatibility

The F1 has connectivity and compatibility of professional grade. A wide range of digital and analog computer and video sources are all supported through industry standard connectors, allowing easy installation. The F1 supports up to 1920 x 1080 resolution for full compatibility with HDTV. It also supports all available types of synch signals, and digital video over DVI supports the industry standard HDCP encryption signalling for lossless transfer. The high bandwidth allows for very high input signal frequencies, and supports all standard signals. High bandwidth gives head room to handle any signal, and ensures stable projected images. Up to six different sources can be simultaneously connected.

High resolution Optics

The optical system incorporates a fully sealed, all-glass prismless design, using aspherical low dispersion elements. The sealed architecture prevents the optics from dust or smoke contamination, minimises servicing needs, prolongs life of the projector, and enables it to be used in a variety of environments, such as control rooms and simulators. The use of a single lens eliminates any convergence errors, and remains perfectly focused at any time. Complementing the standard lens is a short throw lens with ultra low distortion.

The optics have been designed to create an image that is offset at all time, enabling the image to reside above the horizontal line through the lens, so that the projector can be flush mounted with ceilings, or out of the direct view of the image. The UHP™ lamp from Philips ensures excellent performance during prolonged use.

Focus on build quality and design

The main cabinet consists of only two major parts, and is made from cast magnesium. It is one of the most rigid materials available for any mechanical structure, with high internal stiffness and accuracy. Using magnesium throughout the mechanical structure - also the main optical engine and components are made of it - creates a highly accurate and durable projector. High accuracy guarantees that the optics work under the best possible conditions at any given time, and ensures that image quality and performance is consistent from unit to unit. Thus, applications with multiple projectors installed in systems are easily enabled. The cast magnesium chassis also minimises electronic noise emitted from or allowed into the system.

Precision optics

F1 SXGA 5 : 4 aspect ratio
1.75 - 2.25 : 1

Dist. (m)	Image	Height	Width	Diagonal	Offset 5%
1.5	Max	0.69	0.86	1.10	0.034
	Min	0.53	0.67	0.85	0.027
2	Max	0.91	1.14	1.46	0.046
	Min	0.71	0.89	1.14	0.036
4	Max	1.83	2.29	2.93	0.091
	Min	1.42	1.78	2.28	0.071
6	Max	2.74	3.43	4.39	0.137
	Min	2.13	2.67	3.41	0.107
8	Max	3.66	4.57	5.85	0.183
	Min	2.84	3.56	4.55	0.142
10	Max	4.57	5.71	7.32	0.229
	Min	3.56	4.44	5.69	0.178
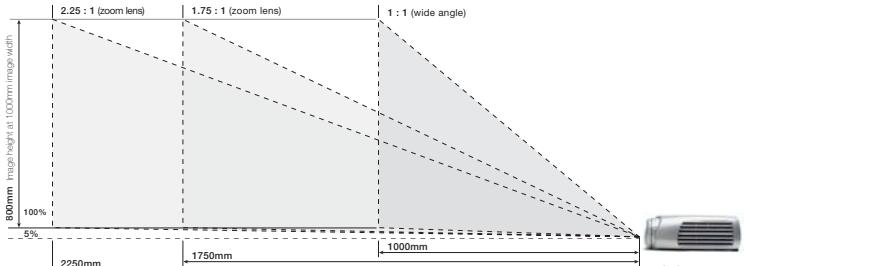
F1 XGA 4 : 3 aspect ratio
2.20 - 2.80 : 1

Dist. (m)	Image	Height	Width	Diagonal	Offset 13%
1.5	Max	0.51	0.68	0.85	0.066
	Min	0.40	0.54	0.67	0.052
2	Max	0.68	0.91	1.14	0.089
	Min	0.54	0.71	0.89	0.070
4	Max	1.36	1.82	2.27	0.177
	Min	1.07	1.43	1.79	0.139
6	Max	2.05	2.73	3.41	0.266
	Min	1.61	2.14	2.68	0.209
8	Max	2.73	3.64	4.55	0.355
	Min	2.14	2.86	3.57	0.279
10	Max	3.41	4.55	5.68	0.443
	Min	2.68	3.57	4.46	0.348

Diagram F1 SXGA: 2.25 : 1 (zoom lens) 1.75 : 1 (zoom lens) 1 : 1 (wide angle) — 800mm Image height at 1000mm image width — 100% — 5% — 2250mm 1750mm 1000mm — F1 SXGA

Diagram F1 XGA: 2.80 : 1 (zoom lens) 2.20 : 1 (zoom lens) 1.28 : 1 (wide angle) — 750mm Image height at 1000mm image width — 100% — 13% — 2800mm 2200mm 1280mm — F1 XGA — Projection distance
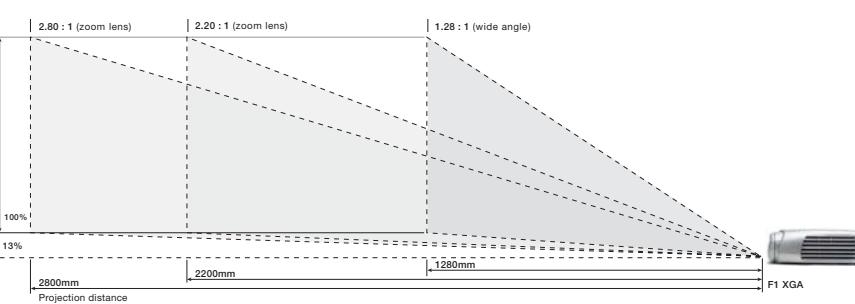
Accessories

Wide Angle Lens

The wide angle lens option provides ultra short throw ratios of 1:1 and 1.28:1 (distance to image width) for the F1 SXGA and the F1 XGA respectively. The throw ratio enables the projector to be used in rear projection systems and simulators, without taking up unnecessary space. The short throw lens has very low optical distortion by any standard, and has been designed to enable matching of several projectors side by side.

Lamp

The user replaceable UHP™ lamp comes in a calibration optimised fixture, to ensure proper and accurate mounting in the projector. A properly mounted lamp enables the projector to work under optimum conditions at all times, with like-new performance. Lamps are quickly and easily replaced by the user.

Infrared Remote Control

The remote control has direct functionality for menu system access and thereby control and command, as well as single-key control for aspect ratio toggle, source switching, volume control and mute. It has a built-in laser pointer, and emulates a computer's mouse control for presentation control. The RC has been designed to omit disturbance

Ceiling Mount

The F1 can be ceiling mounted, and supports rear projection, in addition to standard desktop front projection use.

Ceiling Mount Cable Cover

The provided ceiling mount cable cover, when installed, conceals all cables connected.

bright projectors for bright people ™

Key benefits

28 dB

One of the primary concerns during the design and development of the F1 projectors has been to reduce audible operating noise. While most projectors are very noisy, the F1 operates at only 28dB. This noise is lower than most computers, even laptop computers operating at full speed. To achieve this, the F1 has been designed using magnesium, allowing complete control over resonance and turbulence, typically the troublemaker in regular projectors. In addition, our proprietary air flow system and suspended fan cooling systems further reduce noise.

3 kg

To be truly portable, a projector must be small and light weight. At just 3 kg, the F1 weights only 1/10 of most competing high resolution projectors, which makes it the only portable option in the professional segment. The low weight of the F1 is partly due to the use of exotic materials such as ceramics and magnesium. These are extremely rigid and precise materials that ensure high durability and ruggedness, as well as precise operation for many years. The light weight also optimises the projector for installation in environments where vibration is a concern, and minimises mechanical stress on any fixing or mount.

SXGA

The unsurpassed 1280 x 1024 SXGA resolution of the F1 SXGA makes it the only portable high resolution projector available. It is compatible with sources up to 1920 x 1080 with a maximum dot clock of 205 MHz, thus is the most compatible portable projector anywhere. The high resolution matches that of high end workstations, and provides 67% more information on-screen than standard XGA. The F1 SXGA is fully compatible with all major graphics standards, and is perfect for use within for instance medical, engineering, financial and DTP applications.

3000 lumens

A typical portable business projector has a brightness of 2000 ANSI lumens. The F1 surpasses those with 50%, and sets a new standard for portable projectors, with its high 3000 ANSI lumens rating. This is in class with more commonly installed projectors, thus the F1 is fit both for fixed installations in auditoriums and meeting rooms where light cannot easily be controlled, as well as being a portable projector with professional performance. No matter where a meeting is, or a presentation is held, the F1 is bright enough to cope with the light conditions.

Magnesium

The F1 series has been designed for high durability, long and trouble free operation, as well as an attractive and stylish look. By using magnesium, a very rigid and process-demanding alloy, we can assure that the F1 fulfils any demand for a nice, attractive, projector, and at the same time is many times more durable than most competing projectors made from plastic. The magnesium cabinet is extremely rigid, and to keep the performance high throughout the projector, all internal mechanical details are made from the same alloy. Magnesium is fully corrosion resistant.

Designed and manufactured in Norway

Award for Design Excellence Awarded by the Norwegian Design Council

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Technical specifications

		F1 SXGA	F1 XGA
Projector		SXGA DLP™ digital projector (101-0001-00)	XGA DLP™ digital projector (101-0002-00)
		SXGA WIDE DLP™ digital projector (101-0011-00)	XGA WIDE DLP™ digital projector (101-0012-00)
Display	Technology	DDR DMD™ with DM3	12 degree DDR DMD™ with DM3
	Concept	Sealed all-glass, prism less optical design	Sealed all-glass, prism less optical design
	Resolution	1280 x 1024	1024 x 768
	Brightness	3000 ANSI lumens	3000 ANSI lumens
	Contrast (on/ off)	1000 : 1	2000 : 1
	Aspect Ratio	native 5:4, 16:9 and 4:3 compatible	native 4:3 16:9 and 5:4 compatible
	Colors	16.8 Million simultaneously displayable	16.8 Million simultaneously displayable
Compatibility	Computer Compatibility	UXGA, SXGA+, SXGA, XGA, SVGA, VGA	UXGA, SXGA+, SXGA, XGA, SVGA, VGA
	Horizontal Scan	15 - 150kHz	15 - 150kHz
	Vertical Scan	48 - 190Hz	48 - 190Hz
	Video Compatibility	HDTV (1080i, 720p, 576i/p, 480i/p)	HDTV (1080i, 720p, 576i/p, 480i/p)
		NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM	NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM
	Bandwidth	205 MHz on analog RGB	205 MHz on analog RGB
		165 MHz on digital RGB over DVI	165 MHz on digital RGB over DVI
Optics	Standard Lens	f=31.1 - 39.2mm, F/2.8-3.0	f=31.1 - 39.2mm, F/2.8-3.0
	Throw Ratio (dist. : width)	1.75 - 2.25 : 1	2.20 - 2.80 : 1
	Image size (diagonal)	0.9 - 7.3 meter (2.5-18ft)	0.7 - 5.7 meter (2.5-18ft)
	Lens Offset (of image height)	+5%	+13%
	Focusing Distance	1.5 - 10 meters (5-33ft)	1.5 - 10 meters (5-33ft)
	Zoom Ratio	1.3x	1.3x
	Lamp	250 W UHP™	250 W UHP™
	Lamp Life (typ)	2000 hours	2000 hours
	Optional wide angle lens	f=17.9 mm, F/2.8, 1 : 1 throw ratio	f=17.9 mm, F/2.8, 1.28 : 1 throw ratio
Inputs / Outputs	Computer Inputs	2x 15 pin HDDSUB (analog RGB)	2x 15 pin HDDSUB (analog RGB)
		1x DVI (digital RGB)	1x DVI (digital RGB)
	Video Inputs	3x RCA (component)	3x RCA (component)
		1x 4-pin Mini DIN (S-video)	1x 4-pin Mini DIN (S-video)
		1x RCA composite video	1x RCA composite video
	Audio Inputs	4x 3.5 mm Stereo Mini Jack Audio (all channels)	4x 3.5 mm Stereo Mini Jack Audio (all channels)
	Control and Communication	1x RS232 9-pin DSUB (control)	1x RS232 9-pin DSUB (control)
		1x USB (mouse control and firmware upgrade)	1x USB (mouse control and firmware upgrade)
	Computer Output	1x 15 pin HDDSUB (analog)	1x 15 pin HDDSUB (analog)
	Audio Output	1x 3.5mm Stereo Mini Jack	1x 3.5mm Stereo Mini Jack
Supplied Accessories	Cables	2m VGA cable, 15pin HDDSUB	2m VGA cable, 15pin HDDSUB
		2m DVI-D cable	2m DVI-D cable
		2m USB cable	2m USB cable
		2m A/V cable, 3x RCA - 1x RCA + 3.5mm Mini Jack	2m A/V cable, 3x RCA - 1x RCA + 3.5mm Mini Jack
		Stereo Audio cable 3.5mm Mini Jack - 3.5mm Mini Jack	Stereo Audio cable 3.5mm Mini Jack - 3.5mm Mini Jack
	Other	Ceiling Mount Cable Cover	Ceiling Mount Cable Cover
		Standard IR remote control	Standard IR remote control
General	Operating noise level(typ)	28 dB (A) at 20C/ 68F, sea level	28 dB (A) at 20C/ 68F, sea level
	Dimensions (dwh)	244 x 278 x 88mm (9.6 x 10.9 x 3.5 inches)	244 x 278 x 88mm (9.6 x 10.9 x 3.5 inches)
	Weight	3.0 kg / 6.5 lbs	3.0 kg / 6.5 lbs
	Power Requirements	100 - 240 VAC, 50/60Hz, +/- 10%	100 - 240 VAC, 50/60Hz, +/- 10%
		350 W power consumption	350 W power consumption
	Conformances	CE, CSA "C/US", FCC Class A	CE, CSA "C/US", FCC Class A
	Operating Temperature	0 - 40C / 32 - 104F, 0 - 1500m	0 - 40C / 32 - 104F, 0 - 1500m
		0 - 35C / 32 - 95F, 1500 - 3000m	0 - 35C / 32 - 95F, 1500 - 3000m
	Operating Humidity	20 - 90% RH	20 - 90% RH